EPA Listening Session

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Health threats that affect older persons

If I were to pose the question, "Which is the more serious threat to public health, indoor air or outdoor air ", Which would you answer? You might be surprised to learn that indoor air is typically more polluted than outdoor air , 5-100 times more polluted! EPA lists poor **indoor air quality** as the 4th largest environmental threat to our country. Yet, we carefully regulate only the **outdoor** air pollutants.

Where do we spend most of our time, indoors or outdoors?

Studies from the United States and Europe show that in industrialized nations people spend more than 90% of their time indoors. Actually the number is even higher for the elderly, for infants, for persons with chronic diseases, and indeed, for most urban residents of any age. We spend most of our time indoors surrounded by air pollution from sources such as: consumer products – sprays, disinfectants, building materials, and cigarettes. We employ a wide variety of products in our homes to keep our homes sparkling clean, smelling fresh, and free of pests, germs, and mold. If pollutants are present indoors, people will inhale them. Yet toxic emissions from many of these sources are not controlled. And the elderly are **told** to stay indoors when outside air pollution is high.

Elderly are a "sensitive" population

With the elderly, we focus attention on two diseases of the lung, asthma and chronic obstructive pulmonary disease (COPD). For both diseases, the incidence and severity are affected by atmospheric pollution, And the incidence of both diseases is rising. Over the age of forty-five, the incidence of COPD is age dependent. This lung disease is thought

of as a disease predominantly of old age. Smoking is the biggest single cause of COPD, but passive smoking or environmental tobacco smoke, indoors, is also a significant risk factor for COPD.

Asthma is also exacerbated by atmospheric pollution. In older people, remission of asthma is rare. According to the CDC, asthma affects nearly 17 million Americans and is one of the most **common** and **costly** diseases in the U.S. Elderly men and women living in households and using biomass fuels for cooking and for space heating have a high prevalence of asthma. Having a separate kitchen in the house, and using cleaner fuel is associated with a lower asthma prevalence.

Populations with occupational exposures and chronic lung diseases such as pneumoconiosis, asbestosis, byssinosis and silicosis are at particular risk from air pollution. These lung ailments are exacerbated by atmospheric pollution.

Where have we focused our attention?

There are many federal regulations covering outdoor air quality, but not indoor air quality. Compounding the situation is: the lack of public awareness, inadequate attention and insufficient knowledge of effective interventions and technological solutions to the problem.

What can be done?

We can use inexpensive measures to address the problem. But first, governments at all levels must commit to addressing the problem. We can improve knowledge and foster greater awareness among government officials, communities and other stakeholders

- We can develop practical tools both for measuring and predicting exposure levels, and for measuring health impacts

- We should collect better and systematic information about actual exposure levels experienced within households in different districts and climatic zones

- ❑ We should make better use of mobile air pollution monitoring kits

- ❑ We should encourage development of models for **predicting** the exposure levels based on fuel use, and use of other household products known for their abilities to produce specific environmental pollutants such as gases and particulates, that do indeed trigger or exacerbate chronic respiratory diseases.

To measure health effects, we can use **inexpensive** remote monitoring systems, such as those that use passive infrared sensors and pressure sensors that are placed in the bed and are capable of operating 24 hours a day, 7 days a week. Such passive sensors can detect and quantify the functional ability of the elderly in terms of mobility within the premises.

The cause of indoor air pollution is attributed to the residence itself, to the way of living in the residence and to changes in residential design. The public needs more information such as:

- ❑ What are indoor pollutants
- ❑ What are the sources of pollutants
- ❑ What building materials have been used?
- ❑ A manual can be developed of indoor air pollutants
- ❑ Information disclosure is needed from manufacturers and suppliers of household products and building materials. Manufacturers have this information.

Many of these programs are not costly. They can be initiated now. They are operating today in other developed countries. We should be using them here.